

Claims

The invention claimed is:

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Inscr 7
1. A method for communicating messages to a mobile station by a wireless communication system providing access to a decentralized data network, the method comprising the steps of:
10 providing a sequence of messages;
 providing for each respective message a respective signature; and
 comparing the respective signature for any given respective message with
at least one signature.
 - 15 2. The method of claim 1, further comprising receiving the respective signature for a respective message.
 - 20 3. The method of claim 1, further comprising:
 receiving the respective signature for a respective message; and
 sleeping after receiving the signature.
 - 25 4. The method of claim 1 further comprising:
 receiving the respective signature for a respective message; and
 sleeping after receiving the respective signature if the respective signature
 matches a corresponding signature from the at least one signature.
 - 30 5. The method of claim 1 further comprising:
 receiving the respective signature for a respective message;
 sleeping after receiving the respective signature if the respective signature
 matches a corresponding signature from the at least one signature; and
 transmitting the respective message, wherein sleeping occurs while the
 respective message is being transmitted.

6. The method of claim 1 further comprising:
receiving the respective signature for each respective message; and
sleeping if each respective signature matches a corresponding signature
from the at least one signature.

7. The method of claim 1 further comprising:
receiving the respective signature for each respective message;
sleeping if each respective signature matches a corresponding signature
from the at least one signature; and
transmitting each respective message, wherein sleeping occurs while each
respective message is being transmitted.

8. The method of claim 1, further comprising:
receiving the respective signature for a respective message; and
listening for the respective message if the respective signature does not
match a corresponding signature from the at least one signature.

9. The method of claim 1, further comprising:
receiving the respective signature for a respective message; and
listening for the respective message if the respective signature does not
match a corresponding signature from the at least one signature, wherein listening
is done only until the respective message is received.

10. The method of claim 1, further comprising:
receiving the respective signature for a respective message;
listening for the respective message if the respective signature does not
match a corresponding signature from the at least one signature, wherein listening
is done only until the respective message is received; and
sleeping after the respective message is received.

11. The method of claim 1, further comprising:
receiving the respective signature for a respective message;
listening for the respective message if the respective signature does not
match a corresponding signature from the at least one signature;
5 sleeping after the respective message is received; and
waking up after sleeping.

12. The method of claim 1, further comprising:
receiving the respective signature for a respective message;
10 listening for the respective message if the respective signature does not
match a corresponding signature from the at least one signature;
sleeping after the respective message is received; and
waking up after sleeping for 5.2 seconds.

13. The method of claim 1, further comprising:
receiving at the mobile station the respective signature for a respective
message;
listening at the mobile station for the respective message if the respective
signature does not match a corresponding signature from the at least one
signature; and
20 sleeping at the mobile station after the respective message is received.

14. The method of claim 1, further comprising:
receiving the respective signature for each respective message.

15. The method of claim 1, further comprising:
receiving the respective signature for each respective message; and
listening for a respective message whose respective signature does not
match a corresponding signature from the at least one signature.

16. The method of claim 1, further comprising:

receiving the respective signature for each respective message; and
listening for a respective message whose respective signature does not
match a corresponding signature from the at least one signature; wherein listening
is done only until the respective message is received.

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17. The method of claim 1, further comprising:
receiving the respective signature for each respective message;
listening for a respective message whose respective signature does not
match a corresponding signature from the at least one signature; and
sleeping after the respective message is received.

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18. The method of claim 1, further comprising:
receiving the respective signature for each respective message;
listening for a respective message whose respective signature does not match a
corresponding signature from the at least one signature, wherein listening is done
only until the respective message is received; and
sleeping for 5.2 seconds after the respective message is received.

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19. The method of claim 1, further comprising:
receiving the respective signature for each respective message;
listening for a respective message whose respective signature does not match a
corresponding signature from the at least one signature, wherein listening is done
only until the respective message is received; and
sleeping after the respective message is received; and
waking up after sleeping.

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20. The method of claim 1, further comprising:
receiving the respective signature for each respective message;
listening for a respective message whose respective signature does not
match a corresponding signature from the at least one signature, wherein listening
is done only until the respective message is received;

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sleeping after the respective message is received; and
waking up after sleeping for 5.2 seconds.

21. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective
message;

listening at the mobile station for a respective message whose respective
signature does not match a corresponding signature from the at least one
signature, wherein listening is done only until the respective message is received;
sleeping at the mobile station after the respective message is received; and
waking at the mobile station up after sleeping.

22. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective
message;

listening at the mobile station for a respective message whose respective
signature does not match a corresponding signature from the at least one
signature, wherein listening is done only until the respective message is received;
sleeping at the mobile station after the respective message is received; and
waking at the mobile station up after sleeping for 5.2 seconds.

23. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective
message, wherein the respective signature for each respective message was
transmitted by the wireless communication system;

listening at the mobile station for a respective message whose respective
signature does not match a corresponding signature from the at least one
signature, wherein listening is done only until the respective message is received;

wherein the respective message was transmitted by the wireless
communication system;

sleeping at the mobile station after the respective message is received; and

waking at the mobile station up after sleeping.

24. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective
5 message, wherein the respective signature for each respective message was
transmitted by the wireless communication system;

listening at the mobile station for a respective message whose respective
signature does not match a corresponding signature from the at least one
signature, wherein listening is done only until the respective message is received;

10 wherein the respective message was transmitted by the wireless
communication system;

sleeping at the mobile station after the respective message is received; and
waking at the mobile station up after sleeping for 5.2 seconds.

25. The method of claim 1, further comprising:

receiving the respective signature for each respective message;

listening for a first respective message whose respective signature does not
match a corresponding signature from the at least one signature; and

listening for a second respective message whose respective signature does
20 not match a corresponding signature from the at least one signature, wherein
listening is done until the second respective message is received, and wherein
listening for the second respective message occurs after listening for the first
respective message.

26. The method of claim 1, further comprising:

receiving the respective signature for each respective message;

listening for a first respective message whose respective signature does not
match a corresponding signature from the at least one signature;

listening for a second respective message whose respective signature does
30 not match a corresponding signature from the at least one signature, wherein
listening is done until the second respective message is received, and wherein

listening for the second respective message occurs after listening for the first respective message; and

sleeping after the second respective message is received.

- 5 27. The method of claim 1, further comprising:
 receiving the respective signature for each respective message;
 listening for a first respective message whose respective signature does not
match a corresponding signature from the at least one signature;
 listening for a second respective message whose respective signature does
10 not match a corresponding signature from the at least one signature, and wherein
listening for the second respective message occurs after listening for the first
respective message;
 listening for a third respective message whose respective signature does
not match a corresponding signature from the at least one signature, wherein
15 listening for the third respective message is done after listening for the second
respective message; and wherein listening for the third respective message is done
until the third respective message is received; and
 sleeping after the third respective message is received.

- 20 28. The method of claim 1, further comprising:
 receiving the respective signature for each respective message;
 listening for each respective message whose respective signature does not
match a corresponding signature from the at least one signature, wherein listening
stops if there are no more messages whose respective signature does not match a
25 corresponding signature from the at least one signature; and
 sleeping after listening stops.

29. The method of claim 1, further comprising:
 receiving the respective signature for each respective message;
30 listening for each respective message whose respective signature does not
match a corresponding signature from the at least one signature, wherein listening

stops if there are no more messages whose respective signature does not match a corresponding signature from the at least one signature;

sleeping after listening stops; and

waking up after sleeping.

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30. The method of claim 1, further comprising:

receiving the respective signature for each respective message;

listening for each respective message whose respective signature does not match a corresponding signature from the at least one signature, wherein listening stops if there are no more messages whose respective signature does not match a corresponding signature from the at least one signature;

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sleeping after listening stops; and

waking up 5.2 seconds after sleeping.

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31. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective message, wherein the respective signature for each respective message is transmitted by the wireless communication system;

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listening at the mobile station for each respective message whose respective signature does not match a corresponding signature from the at least one signature, wherein listening stops if there are no more messages whose respective signature does not match a corresponding signature from the at least one signature;

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wherein each respective message is transmitted by the wireless communication system;

sleeping at the mobile station after listening stops; and

waking up at the mobile station after sleeping.

32. The method of claim 1, further comprising:

receiving at the mobile station the respective signature for each respective message, wherein the respective signature for each respective message is transmitted by the wireless communication system;

listening at the mobile station for each respective message whose
5 respective signature does not match a corresponding signature from the at least one signature, wherein listening stops if there are no more messages whose respective signature does not match a corresponding signature from the at least one signature;

wherein each respective message is transmitted by the wireless
10 communication system;

sleeping at the mobile station after listening stops; and
waking up at the mobile station 5.2 seconds after sleeping.

33. The method of claim 1, further comprising:
waking up at the mobile station; and
receiving the respective signature for a respective message at the mobile
station.

34. The method of claim 1, further comprising:
waking up at the mobile station;
receiving the respective signature for a respective message at the mobile
station; and
listening for the respective message if the respective signature does not
25 match a corresponding signature from the at least one signature, wherein listening is done only until the respective message is received.

35. The method of claim 1, further comprising:
waking up at the mobile station;
30 receiving the respective signature for a respective message at the mobile station;

listening for the respective message if the respective signature does not match a corresponding signature from the at least one signature, wherein listening is done only until the respective message is received; and sleeping after the respective message is received.

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36. The method of claim 1, further comprising:
waking up at the mobile station;
receiving the respective signature for each respective message at the mobile station;

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listening for a respective message whose respective signature does not match a corresponding signature from the at least one signature, wherein listening is done only until the respective message is received; and sleeping after the respective message is received.

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37. The method of claim 1, further comprising:
waking up at the mobile station;
receiving the respective signature for each respective message at the mobile station;

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listening for each respective message whose respective signature does not match a corresponding signature from the at least one signature, wherein listening stops if there are no more messages to be whose respective signature does not match a corresponding signature from the at least one signature; and sleeping at the mobile station listening stops.

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38. The method of claim 1, wherein the sequence of messages is a sequence of overhead messages.

39. The method of claim 1, wherein the sequence of messages is periodically transmitted by the wireless communication system.

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41. The method of claim 1, wherein the sequence of messages is aperiodically transmitted by the wireless communication system.

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42. The method of claim 1, wherein the sequence of messages is transmitted to at least one mobile station.

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43. The method of claim 1, wherein each message is embedded in a message capsule having a plurality of messages.

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44. The method of claim 1, wherein providing for each respective message a respective signature comprises hashing each message.

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45. The method of claim 1, wherein providing for each message a respective signature comprises hashing each message to generate a first hash, wherein hashing comprises rehashing any message if the first hash of any message matches any of at least one corresponding signature from the at least one signature, wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature.

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46. The method of claim 1, wherein providing for each message a respective signature comprises hashing each message to generate a first hash, wherein hashing comprises adding a random value to the first hash if the first hash of any message matches any of at least one corresponding signature from the at least one signature, wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature.

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47. The method of claim 1, wherein providing for each message a respective signature comprises hashing each message to generate a first hash, wherein hashing comprises rehashing any message with a random value if the first hash of

any message matches any of at least one corresponding signature from the at least one signature, wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature.

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The method of claim 1, wherein providing for each message a respective signature comprises hashing each message to generate a first hash, wherein hashing comprises rehashing any message with a random value if the first hash of any message matches any of at least one corresponding signature from the at least one signature, wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature, and wherein the time period T_{Delta} is larger than the largest allowed sleep time of any mobile station communicating with the wireless communication system.

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The method of claim 1, wherein providing for each respective message a respective signature comprises hashing each message to generate a sixteen bit value for the respective signature.

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The method of claim 1, wherein providing for each message a respective signature comprises hashing each message to generate a thirty-two bit value for the respective signature.

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The method of claim 1, wherein providing for each message a respective signature comprises giving the respective signature a value stored in a counter.

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The method of claim 1, wherein providing for each message a respective signature comprises:

incrementing a counter; and

giving the respective signature a value stored in the counter.

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53. The method of claim 1, wherein providing for each message a respective signature comprises:

incrementing a counter if any given message does not match a
corresponding first message, wherein the corresponding first message was
generated at a time before commencing providing a sequence of messages; and
giving the respective signature a value stored in the counter.

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54. The method of claim 1, wherein one of the sequence of messages includes an overhead message indicative of base station parameters in the wireless communication system.

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55. The method of claim 1, wherein one of the sequence of messages includes an overhead message indicative of base station parameters in the wireless communication system, and wherein the base station parameters include system parameters, access parameters, channel list, and neighbor list parameters.

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56. The method of claim 1, wherein one of the sequence of messages includes an overhead message indicative of the wireless communication system's system wide parameters.

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57. The method of claim 1, wherein one of the sequence of messages includes an overhead message indicative of the wireless communication system's system wide parameters, and wherein the system wide parameters include system parameters, access parameters, channel list, and neighbor list parameters.

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58. The method of claim 1 further comprising receiving the sequence of messages at the mobile station.

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59. The method of claim 1 further comprising receiving the sequence of messages at the mobile station, and wherein providing for each message a respective signature comprises hashing each message at the mobile station.

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~~60.~~ The method of claim 1 further comprising receiving any given one of the sequence of messages at the mobile station;

wherein providing for each message a respective signature comprises hashing each message at the mobile station to generate a first hash for each message,

wherein hashing comprises rehashing any message using a random value if the first hash of any message matches any of at least one corresponding signature from the at least one signature; and

wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature.

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~~61.~~ The method of claim 1 further comprising receiving any given one of the sequence of messages at the mobile station;

wherein providing for each message a respective signature comprises hashing each message at the mobile station to generate a first hash for each message,

wherein hashing comprises rehashing any message using a random value if the first hash of any message matches any of at least one corresponding signature from the at least one signature;

wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature; and

wherein T_{Delta} is longer than the longest allowed sleep time for any mobile station communicating with the wireless communication system.

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~~63.~~ The method of claim 1 further comprising:

providing at least one stored message at the mobile station;

receiving the sequence of messages at the mobile station;

wherein each of the at least one stored message has a corresponding message in the sequence of messages;

wherein providing for each respective message a respective signature comprises hashing each message at the mobile station to generate a first hash for each message;

wherein hashing comprises rehashing any message using a random value if the first hash of any message matches any of at least one corresponding signature from the at least one signature;

wherein the at least one corresponding signature was generated within a time period T_{Delta} before commencing providing for each message a respective signature;

wherein T_{Delta} is longer ^{than} the longest allowed sleep time of any mobile station communicating with the wireless system; and

replacing any message from the at least one stored message with a corresponding message from the sequence of messages received at the mobile station if the respective signature of the corresponding message does not match a corresponding signature from the at least one signature.

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~~64.~~ The method of claim 1 further comprising:

providing at least one stored message at the mobile station;

receiving the sequence of messages at the mobile station;

wherein each of the at least one stored message has a corresponding message in the sequence of messages; and

replacing any message from the at least one stored message with a corresponding message from the sequence of messages received at the mobile station if the respective signature of the corresponding message does not match a corresponding signature from the at least one signature.

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